REMARKS

This is intended as a full and complete response to the Office Action dated April 26, 2005, having a shortened statutory period for response set to expire on July 26, 2005. Reconsideration and allowance of the claims are requested.

In this office action, the Examiner withdraws claims 17-20 as being drawn to a non-elected group. These claims have been cancelled without prejudice to applicant's rights to reassert or resubmit these claims. However, it is also asserted that claims 16 and 27-29 may be considered to be linking claims to the withdrawn claims 17-20. If the Examiner finds these claims to be in condition for allowance, then consideration of these claims as linking claims to the withdrawn claims 17-20 is respectfully requested.

Claims 1-15 are rejected under 35 U.S.C. § 103 as unpatentable over *Gannett* (U.S. 6,118,452). This rejection is respectfully traversed. The Examiner, in rejecting the claims, alleges that *Gannett* teaches multiple output buffers; the Examiner concedes that the multiple output buffers are not associated with a unique buffer identifier but asserts this would be inherent and obvious. This is respectfully traversed.

In the Background of the Invention of the present application, the application states that the output buffer or output buffers are predetermined by an application and communicated to the graphics system using a register write program instruction (*see,* paragraph [0002]). Then, at page 11, paragraph [0032], it is stated that conventionally the output buffer is predetermined for all fragments within a plurality of primitives such that a destination buffer may not be selected for each fragment or for the fragments within a primitive. These teachings within the application are entirely consistent with and a more plausible interpretation of the teachings of the cited reference.

It is an important feature of the present invention that fragment data is processed as specified by the fragment program to produce process fragment data for storage in multiple output buffers, and an output buffer identifier is determined in the fragment processing pipeline and associated with the processed fragment data as recited in claim 1 (now combined with original claim 9). There is no suggestion in the *Gannett* patent cited by the Examiner that the fragment processing pipeline of *Gannett* is capable of determining the address to be associated with the processed fragment data. Reconsideration and allowance of claim 1 is therefore requested.

Claim 4 is rejected over *Gannett* as teaching an output buffer having data represented in two or more data formats. This language has been clarified by the amendment now submitted to read even more clearly on, for example, the exemplary embodiments of Figs. 2C and 2D which illustrate that any one buffer of multiple output buffers may store both fixed or floating point data, or may include both 16-bit and 32-bit data. None of these features are taught in the reference.

The Examiner has also rejected claim 6 over *Gannett* as teaching that any of the multiple output buffers can be selected for display, citing the abstract. A review of the abstract does not find such a teaching; and further, this limitation is intended to describe, among other things, the features exemplified in Fig. 2A wherein different parts of the display 230 display data stored in output buffer 220 or output buffer 225 in separate locations on the physical display. There is no suggestion of such a capability in *Gannett*.

The applicants have also submitted several new claims to recite additional features which are provided by the present invention. For example, claim 22 recites that the graphics data includes at least two fragments in a single surface, the pipeline being configured to write the fragments to separate ones of the output buffers, thereby facilitating the display of different features within the display. No such capability is taught or suggested by *Gannett*.

Claim 23 states that one of the output buffers for each fragment may be computed in the fragment processing pipeline by a procedurally computed function within the pipeline. This feature is also completely absent from and is not suggested by the reference.

The use of multiple output buffers also facilitates processing fragments in parallel (claim 24) and avoids read/write conflicts by the use of a flush instruction (claim 25).

Finally, the ability to avoid display of invisible fragments by displaying and calculating only visible fragments is achieved by combining the fragment data visible fragments with depth data from a depth map which is concurrently stored in one of the multiple output buffers. This feature of claim 26 is taught and enabled by the present invention but is not found in the *Gannett* reference.

The Examiner has rejected claims 10 and 11 based on the same reasoning as claim 1; this rejection is respectfully traversed for the reasons outlined above. The method recites processing fragment data and determining an output buffer identifier associated with the processed fragment data for storing and allowing easy access of the fragment data, facilitating multiple processing of the fragment data.

The method of claim 16 recites, in further detail, utilizing the multiple output buffers to calculate and display mesh data which enables the display of animated geometry. The Examiner has cited *Mori et al.* (U.S. 6.704,018) as teaching this feature, but the steps recited in claim 16, and the additional steps of utilizing a shader for shading the visible fragments which have been stored after processing in the fragment processing pipeline (claim 27) and displacing the fragment data along a normal vector to produce the displaced meshes (claim 29) are not taught in either one of the references now cited.

In view of these multiple and clear distinctions between the references cited by the Examiner and the invention claimed, reconsideration and allowance of the claims is respectfully requested.

Respectfully submitted,

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